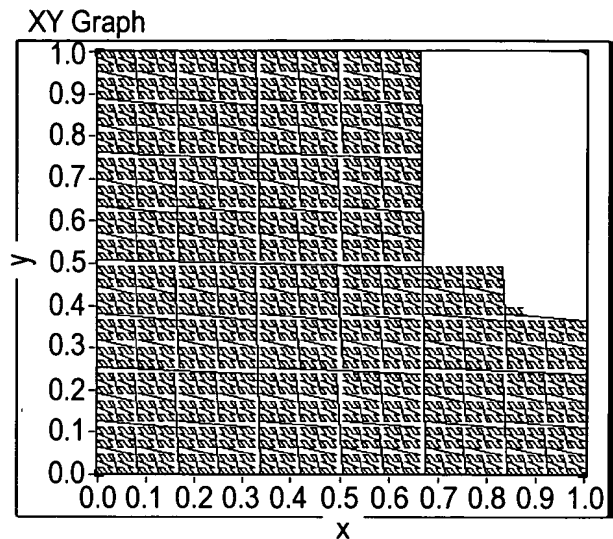


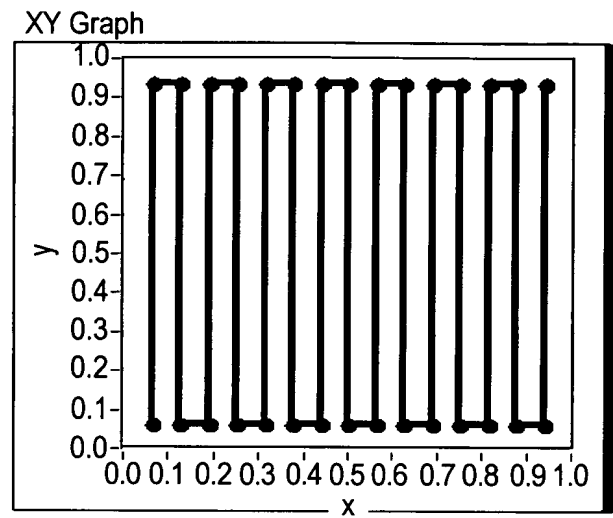


Replacement Sheet



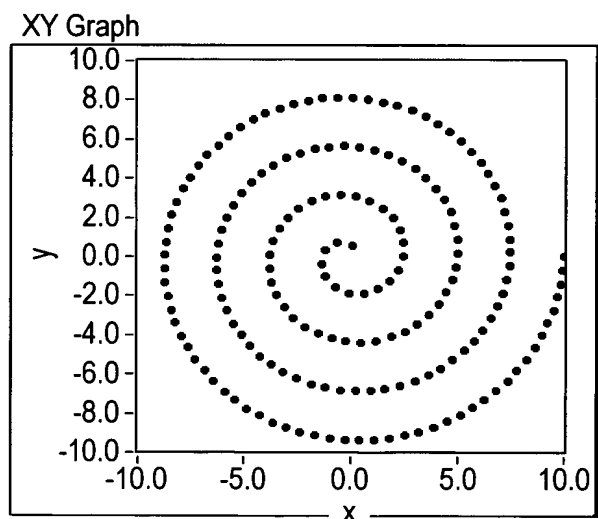
Approximated Peano Curve. The space-filling process has not been completed.

Figure 1A
(Prior Art)



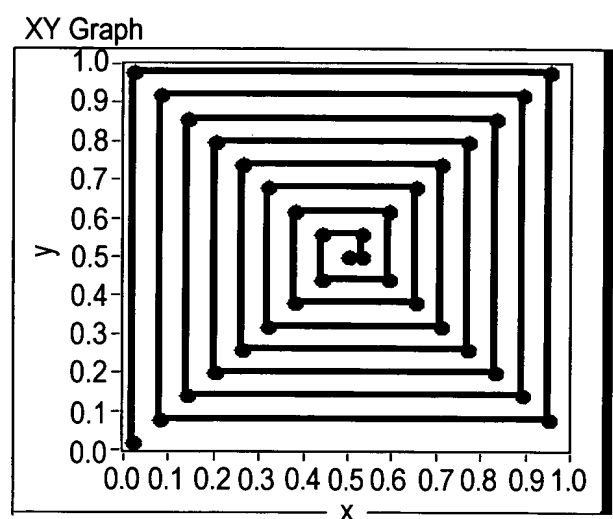
Boustrophedon Path

Figure 1B
(Prior Art)



Archimedes Spiral defined by equally distributed points

Figure 1C
(Prior Art)



Spiral-like line-based scanning

Figure 1D
(Prior Art)

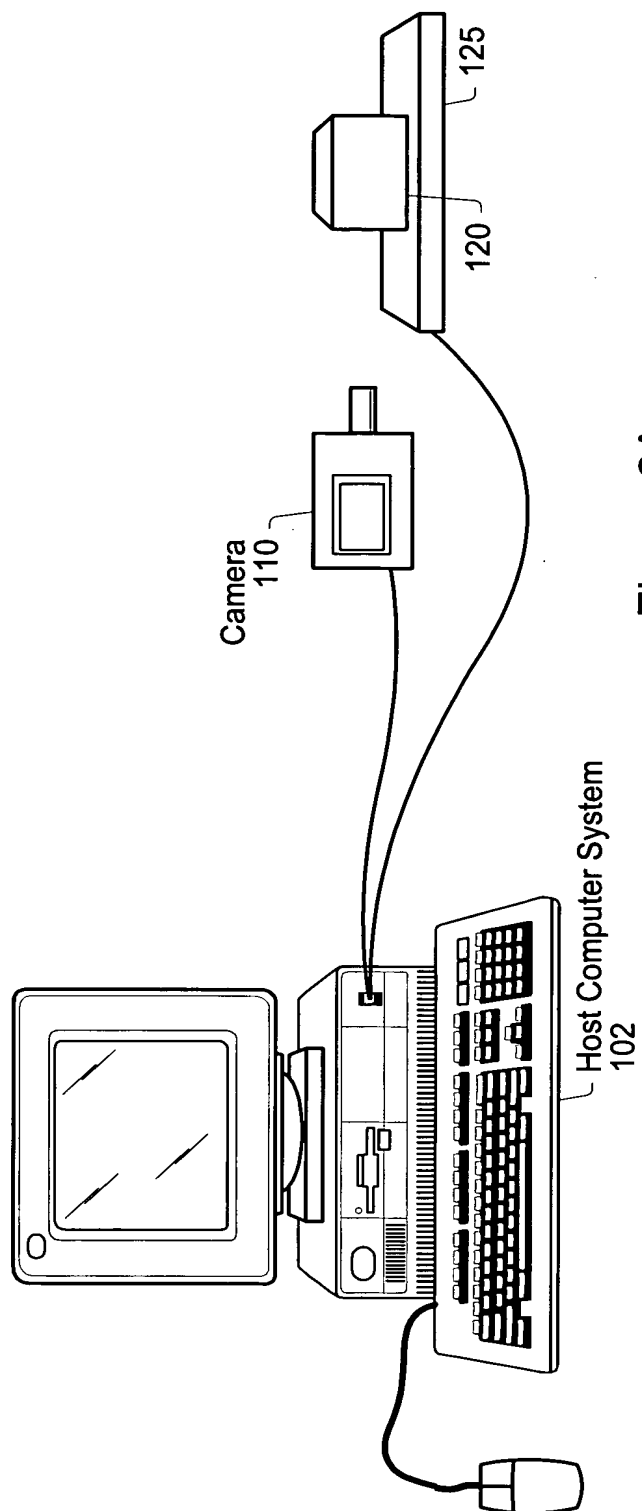
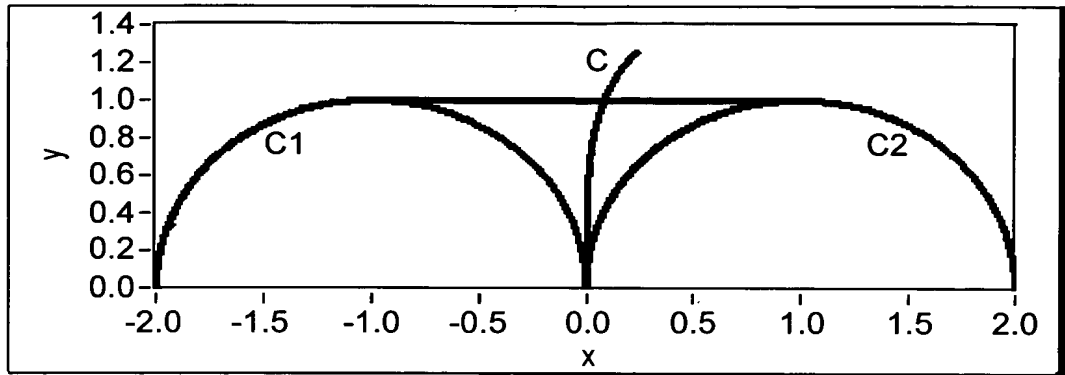


Figure 2A

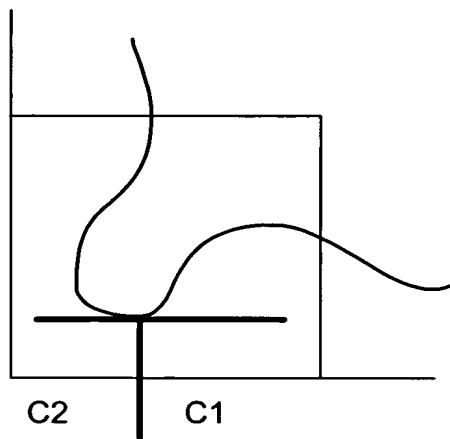
Replacement Sheet

XY Graph



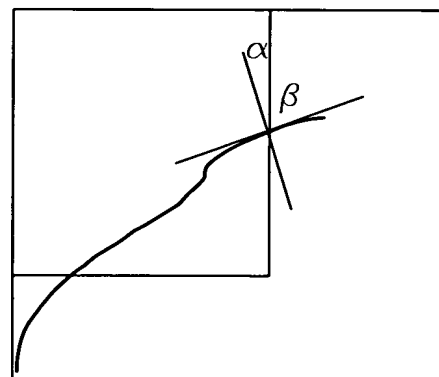
The situation of Lemma 1

Figure 4A



Case (A)

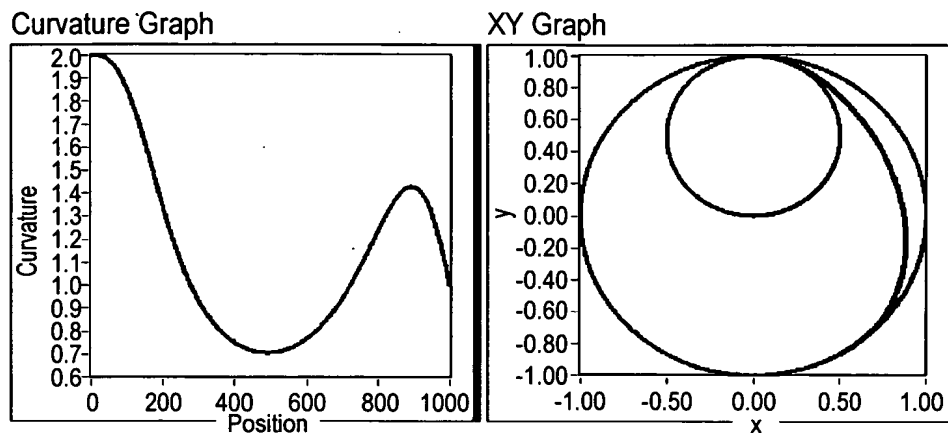
Figure 4B



Case (B)

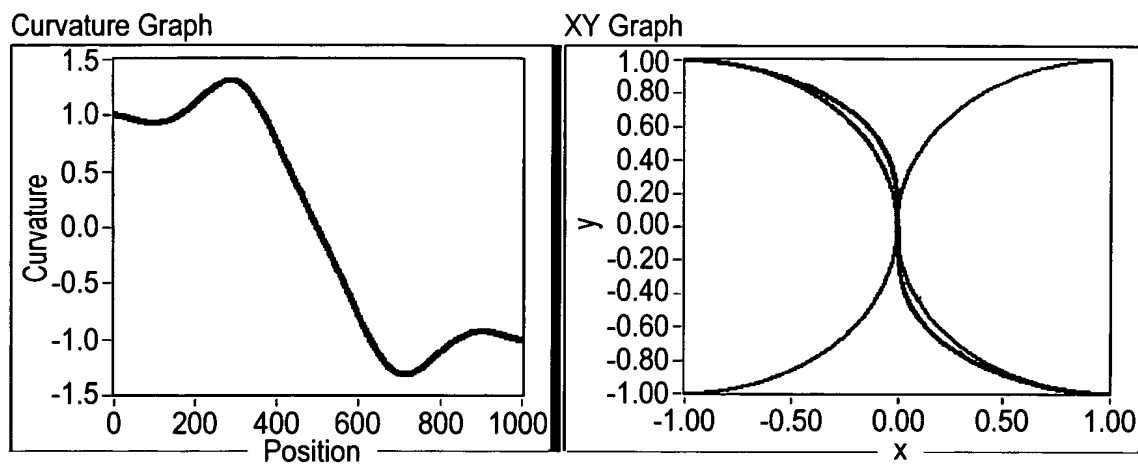
Figure 4C

Replacement Sheet



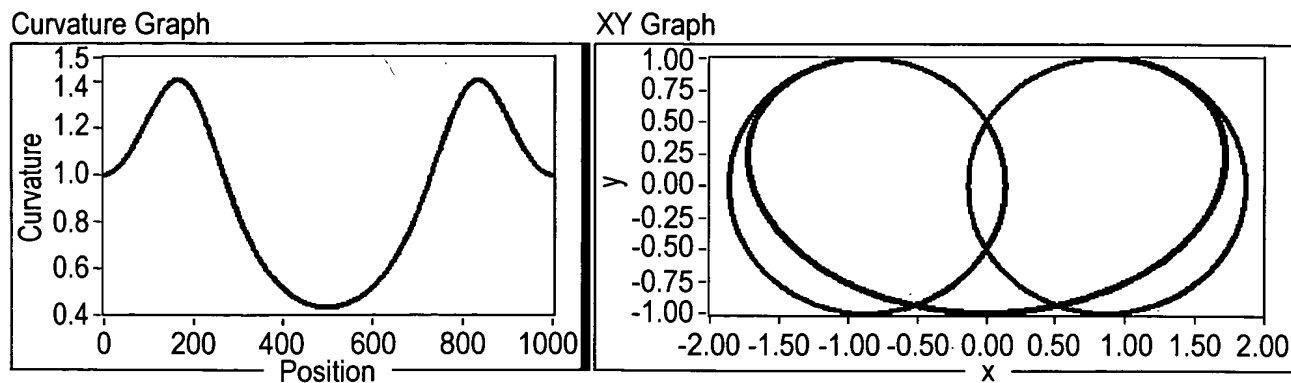
Smooth transition between two circles of different radii.

Figure 4D



Smooth transition between two circles of same radius.

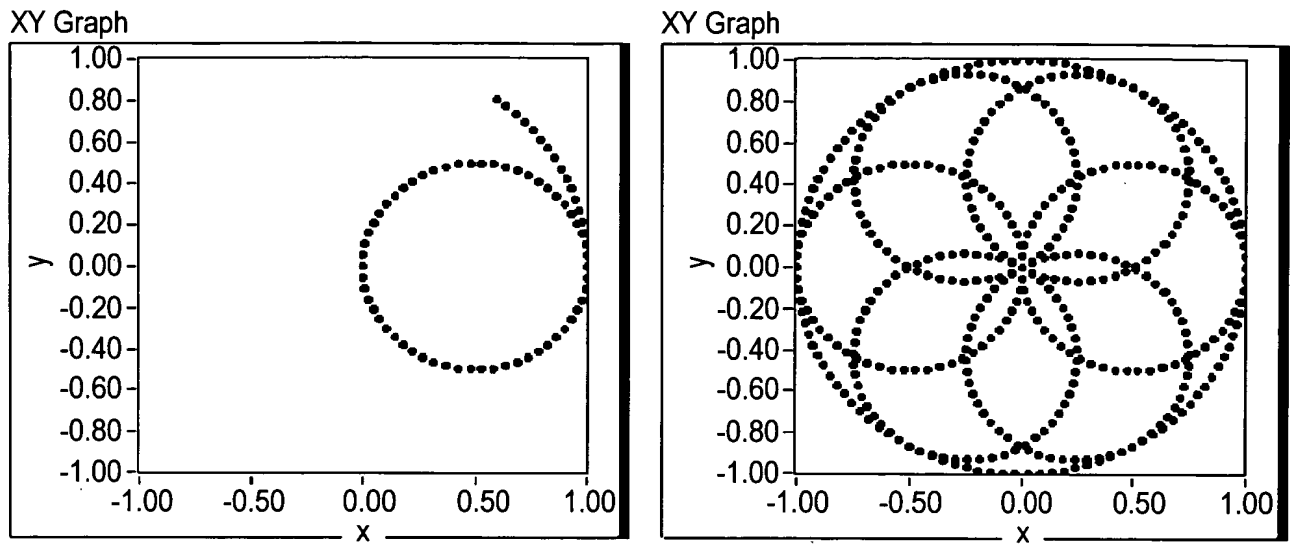
Figure 4E



Transition between two unit circles of radius 1.
The distance between the circles is $\sqrt{3}$

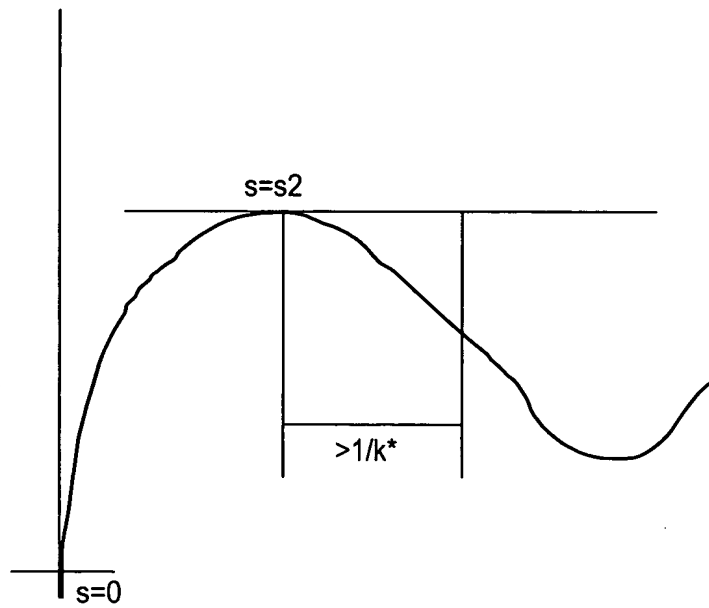
Figure 4F

Replacement Sheet



Beginning (left) and completion (right) of a scanning scheme where the curvature is below a certain value

Figure 5A

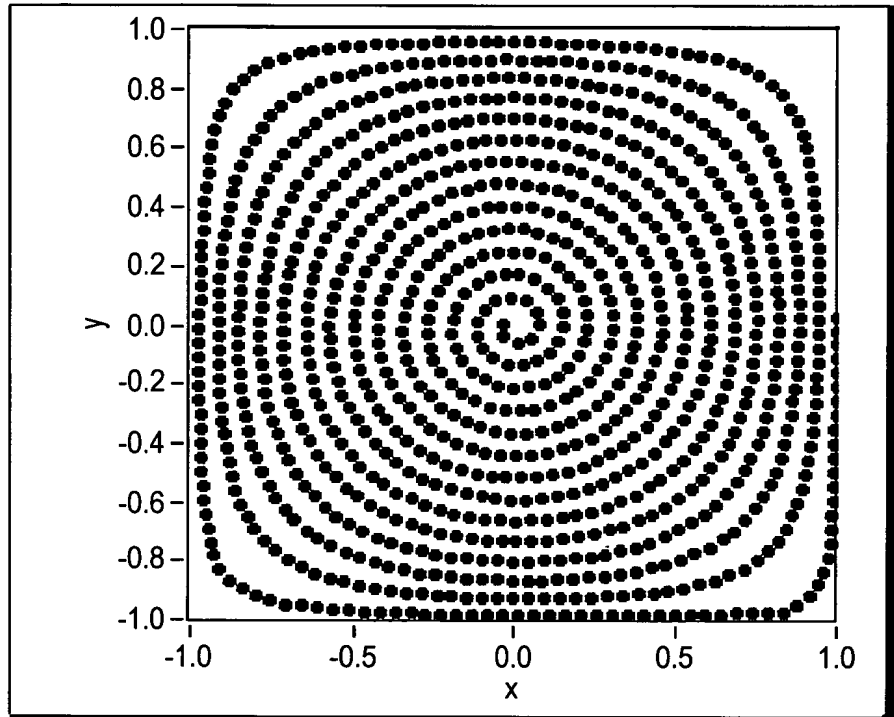


Construction of s_2 and the subsequent part of the curve

Figure 5B

Replacement Sheet

XY Graph

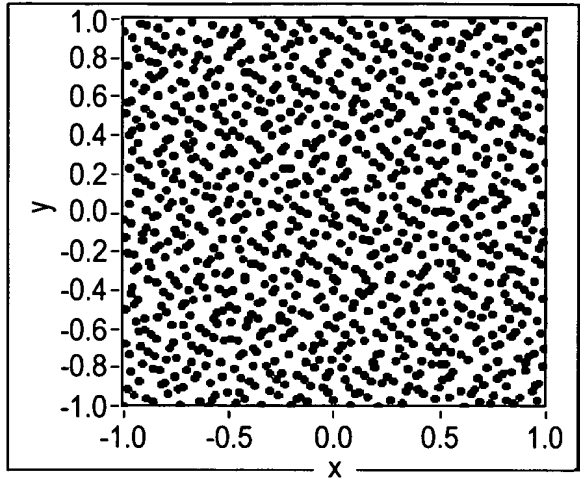


Conformal Spiral.

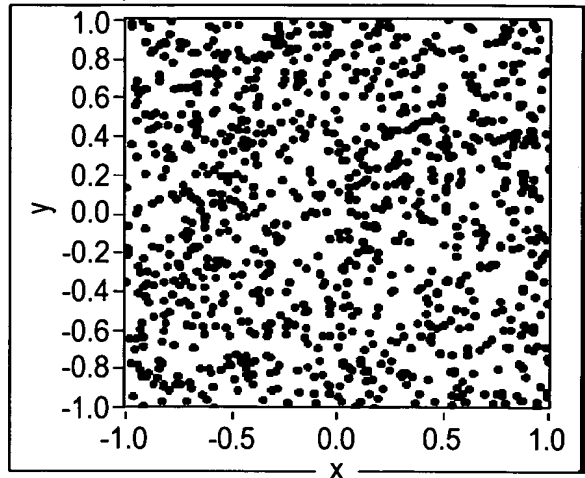
Figure 6

Replacement Sheet

Halton (2,3)



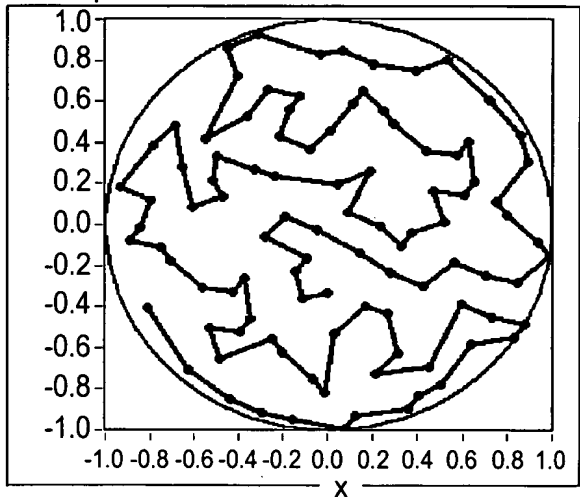
Randomly Chosen



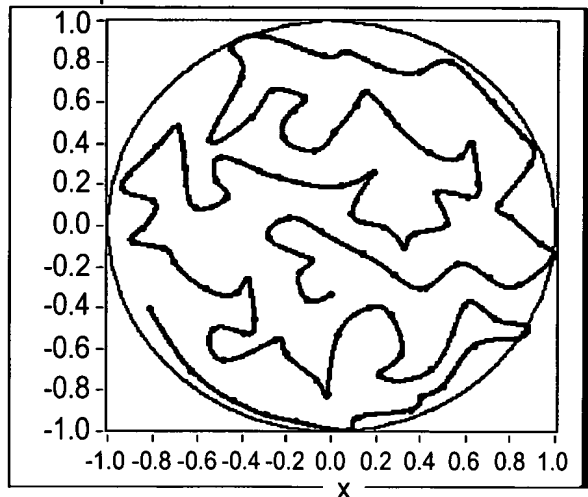
The first 1000 Halton points (left) and randomly chosen points (right)

Figure 8A

XY Graph



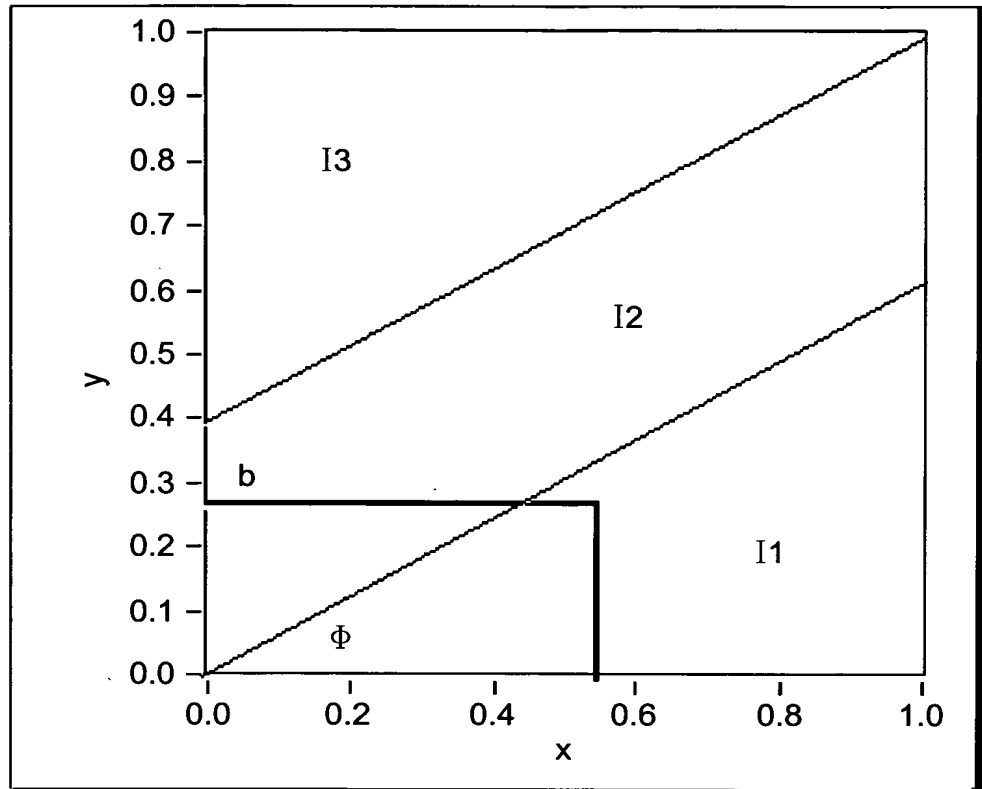
XY Graph



Original solution (left) and splined version (right).

Figure 8B

Replacement Sheet



Definition of I_1 , I_2 , and I_3

Figure 10

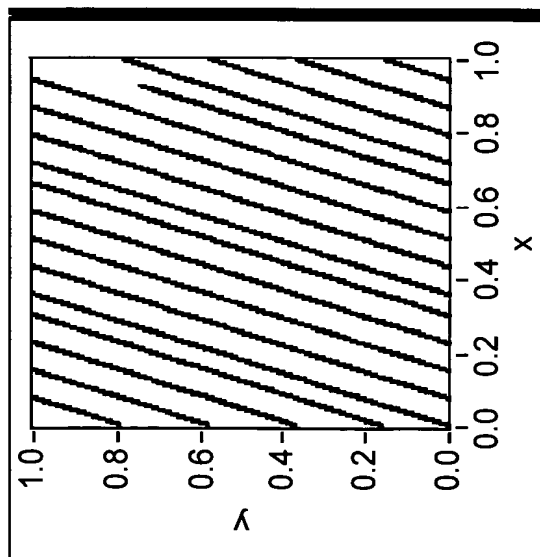


Figure 11A

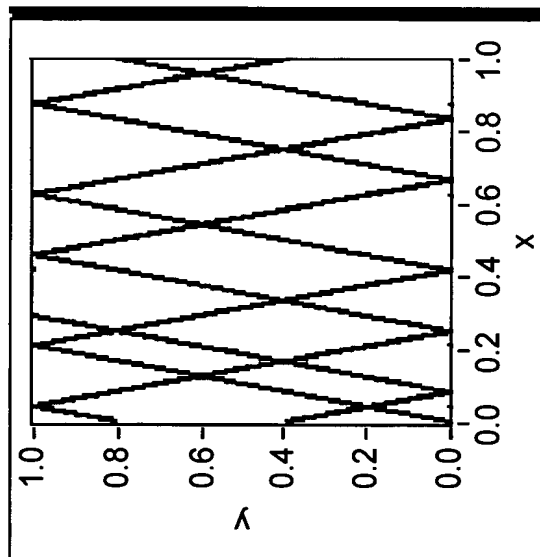


Figure 11B

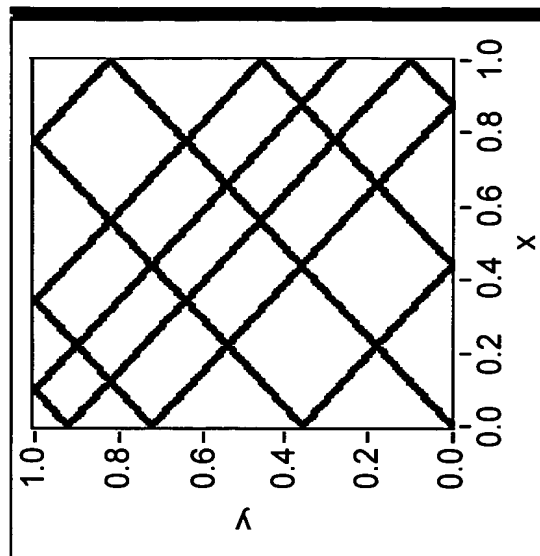
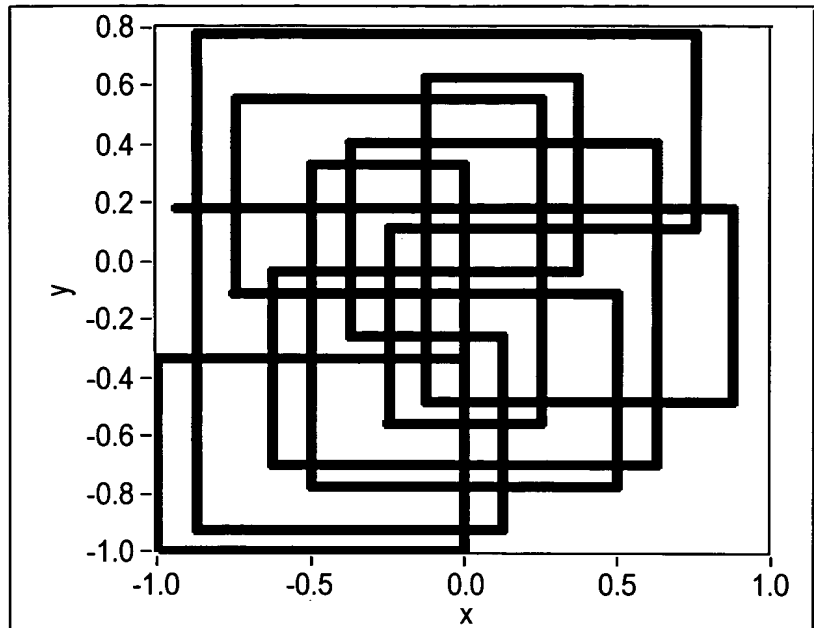


Figure 11C

Replacement Sheet

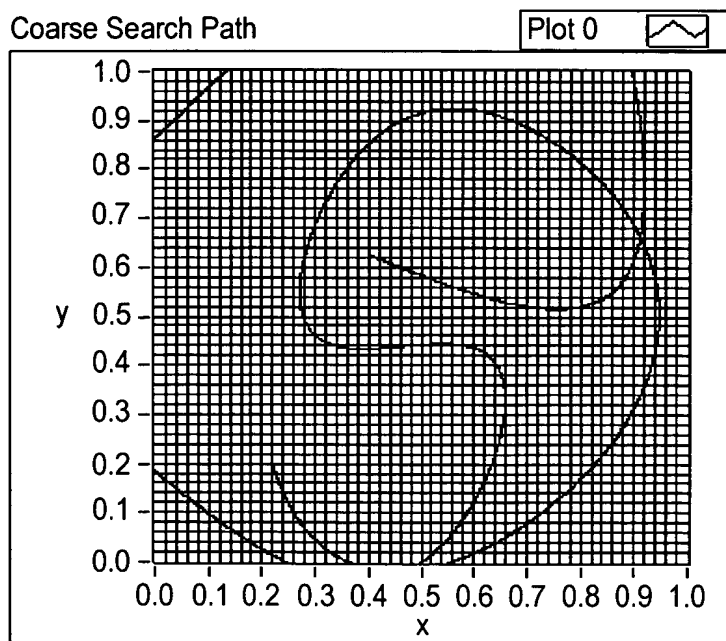
XY Graph



Beginning of a Low Discrepancy Curve based on
a specific Halton Sequence in 2d

Figure 13A

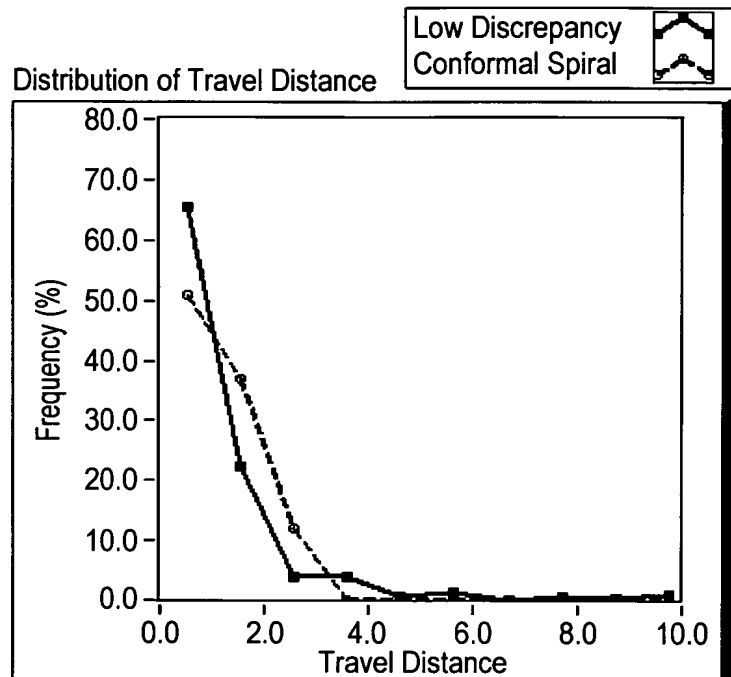
Coarse Search Path



Splined Low Discrepancy Curve coarse search

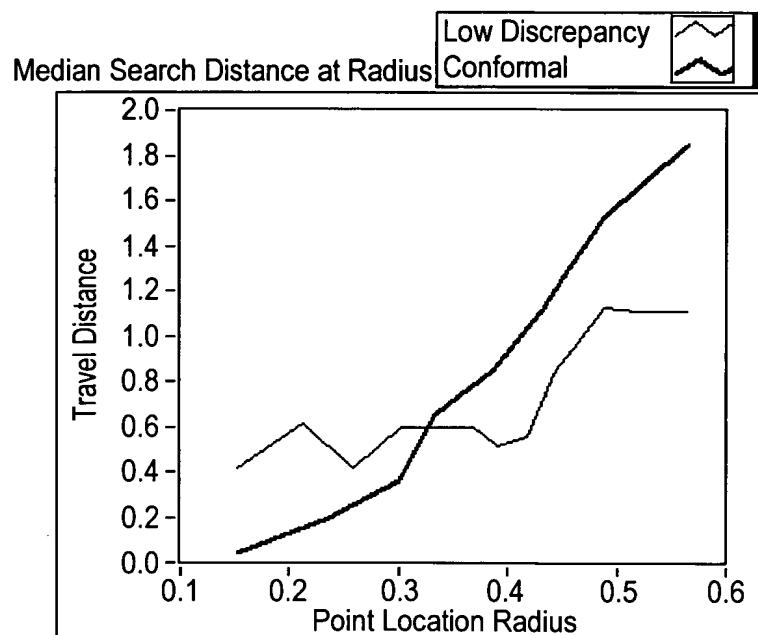
Figure 13B

Replacement Sheet



Comparison of Conformal Spiral and Low Discrepancy Searching

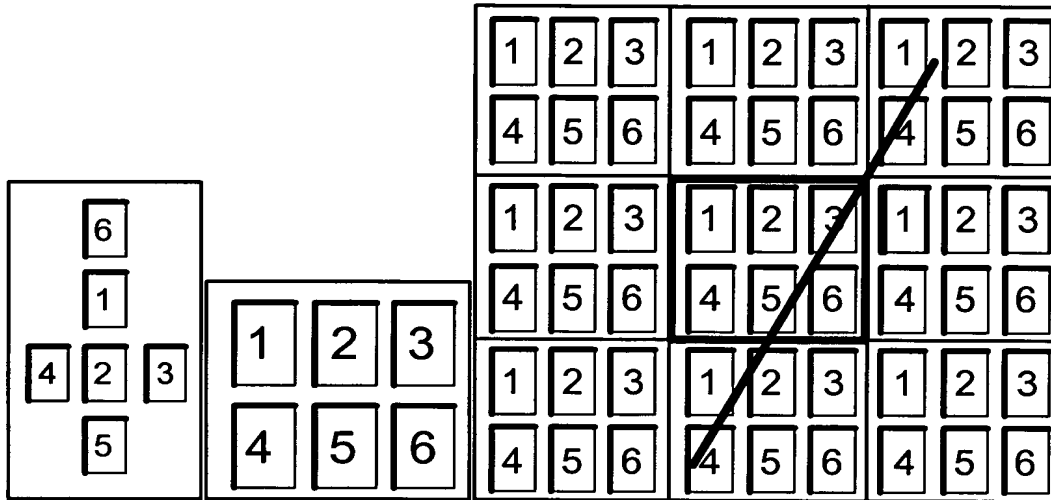
Figure 13C



Comparison of Travel Distance for Low Discrepancy Search and Conformal Spiral Search

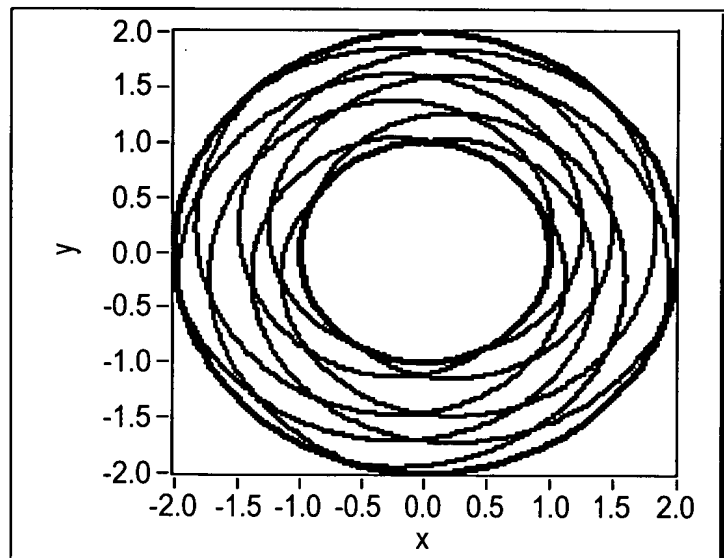
Figure 13D

Replacement Sheet



Tiling of the plane and relation to the surface of the unit cube

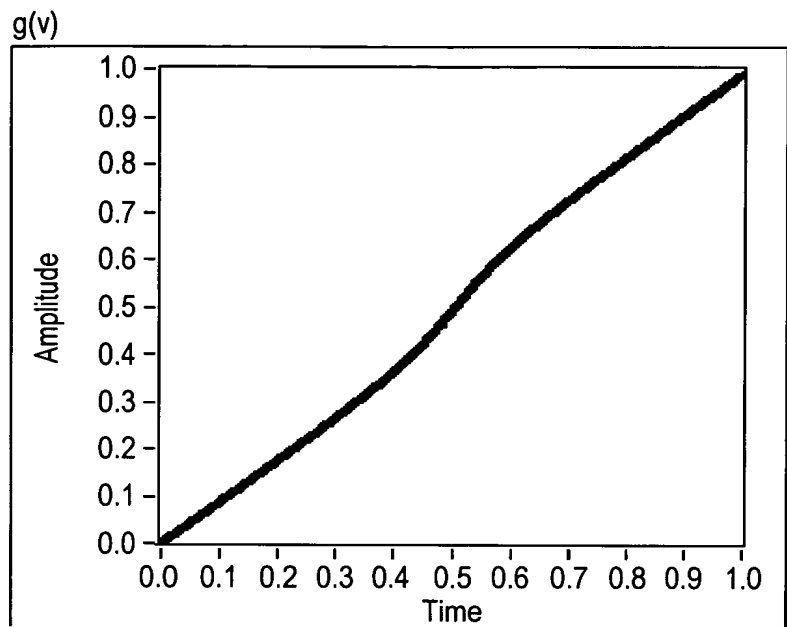
Figure 15A



Low-discrepancy curve in a ring

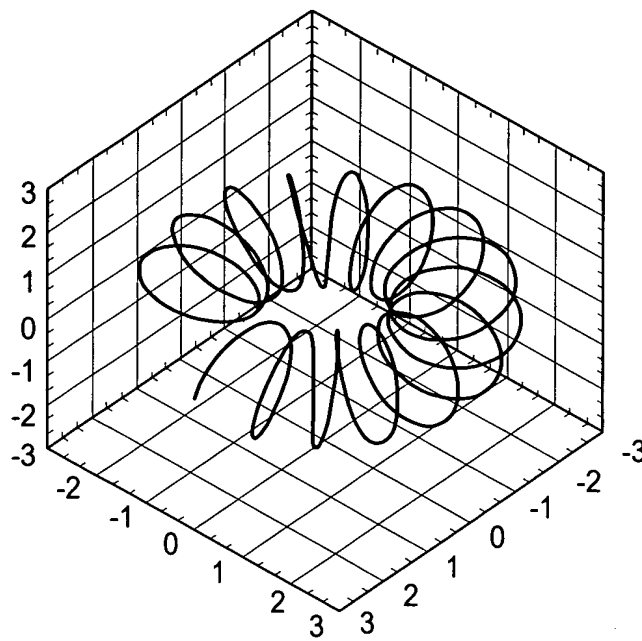
Figure 15B

Replacement Sheet



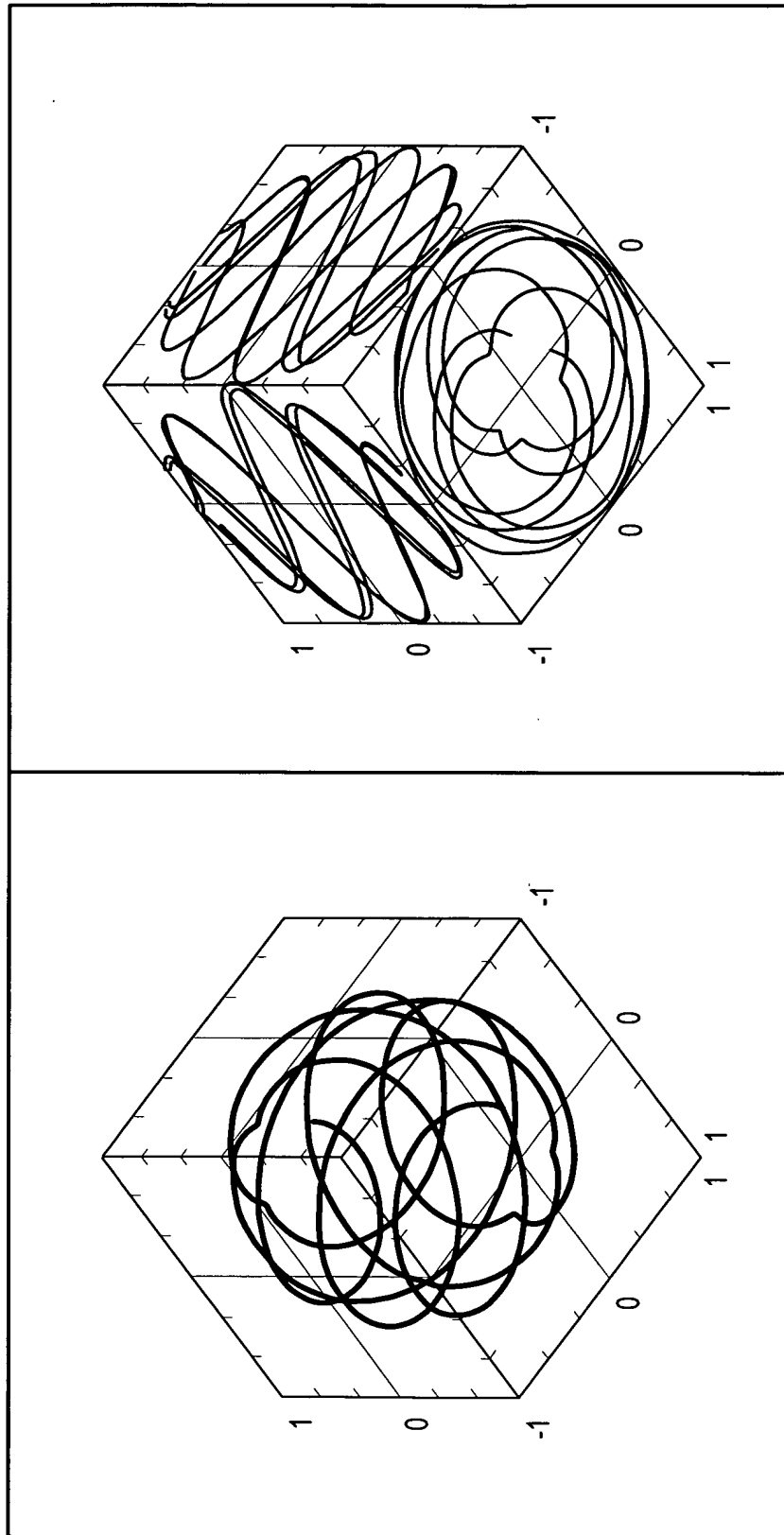
Low Discrepancy Preserving Mapping Function

Figure 15C



Low-discrepancy curve filling the surface of a torus

Figure 15D

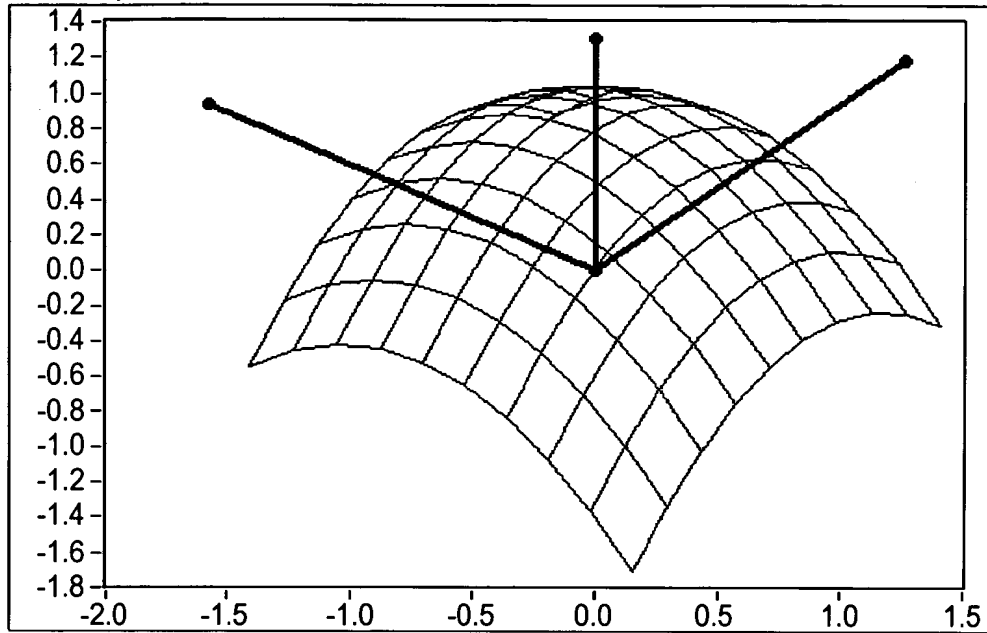


Low-discrepancy curve on a sphere (left) and projections (right)

Figure 16

Replacement Sheet

XYZ Graph

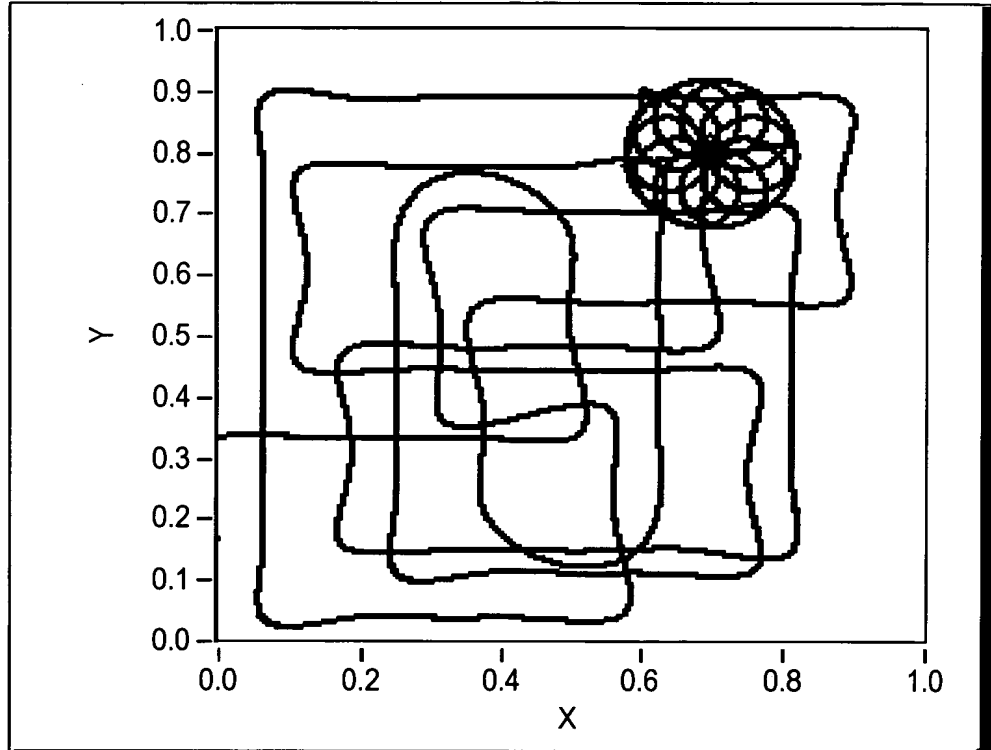


Surfaces can be scanned efficiently when the term low discrepancy sequence/ curve can be generalized, e.g. based on metrics on the surface.

Figure 18

Replacement Sheet

Search Path

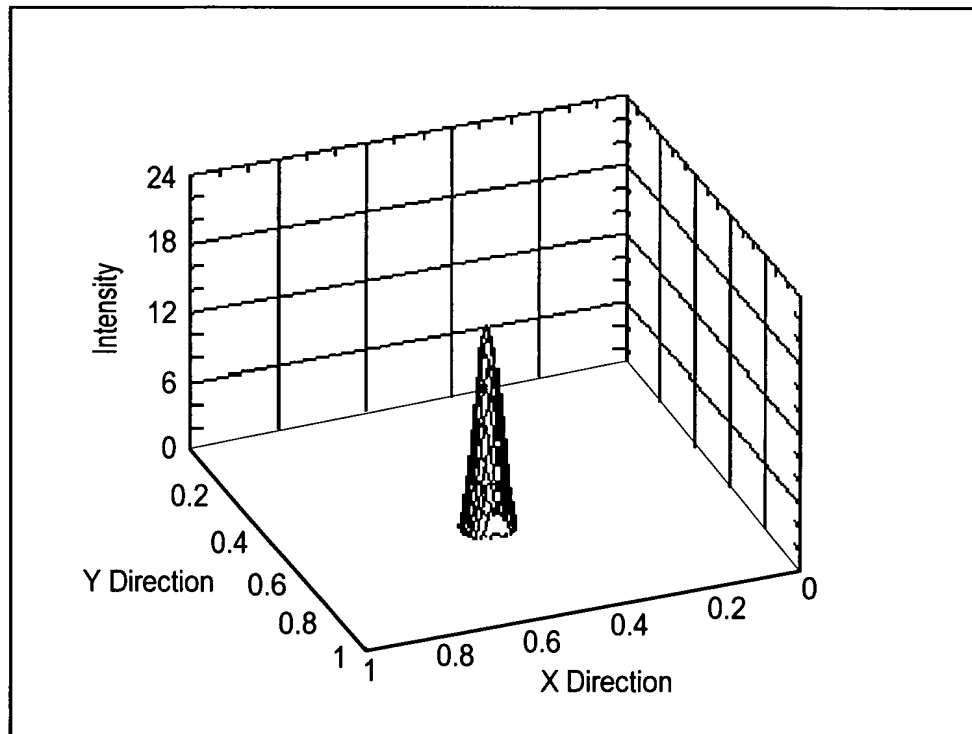


Splined Low Discrepancy Curve coarse search with refined final approach

Figure 19

Replacement Sheet

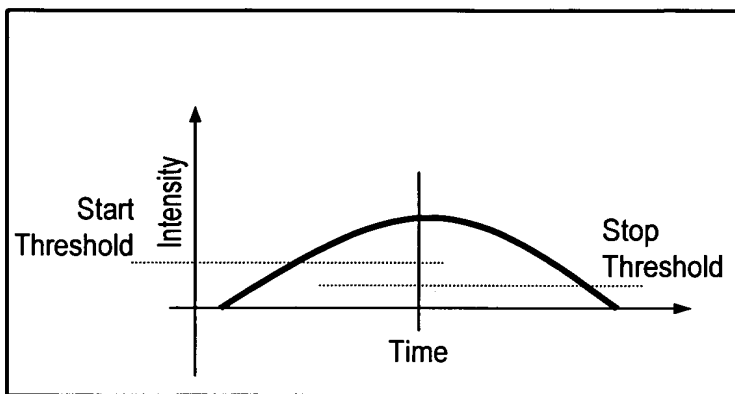
Intensity Field Distribution in Search Area



Beam intensity distribution in search area

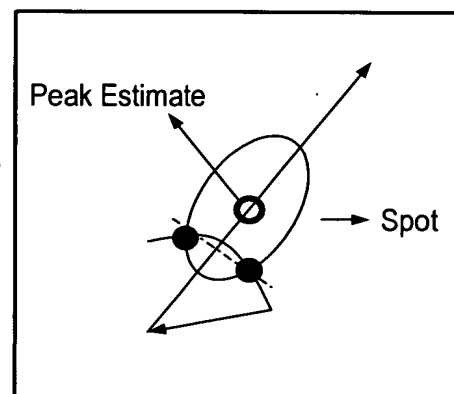
Figure 20

Replacement Sheet



Location of the Peak

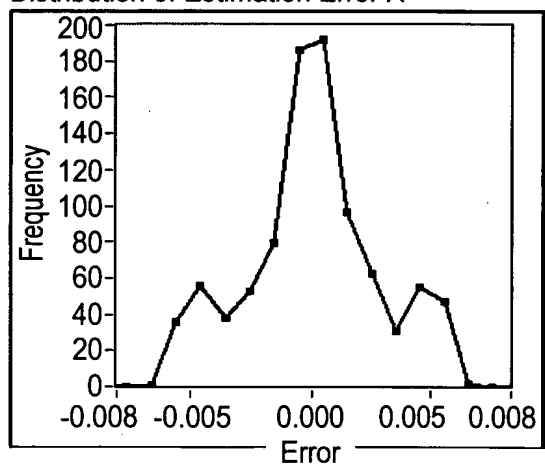
Figure 21A



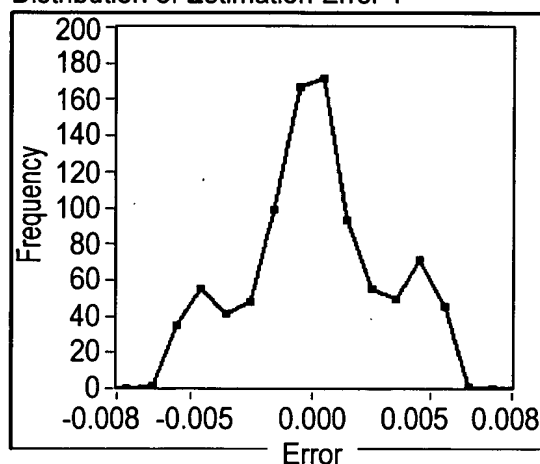
Initial Final Approach Move

Figure 21B

Distribution of Estimation Error X



Distribution of Estimation Error Y



Error distribution of the estimated peak X coordinate error (left) and Y coordinate error (right)

Figure 21C